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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/763,825

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Jan Weber

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EXAMINER

MCEVOY, THOMAS M

ART UNIT

PAPER NUMBER

3731

MAIL DATE

DELIVERY MODE

08/24/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/763,825	Applicant(s) WEBER ET AL.	
	Examiner THOMAS MCEVOY	Art Unit 3731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 June 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,7-24,26-28,30-38,43,50-59,61-63,65,66,69-76 and 78-87 is/are pending in the application.
- 4a) Of the above claim(s) See Continuation Sheet is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,9-13,15,16,24,28,30-32,34-38,50,52,54,56,57,61,63,71-74 and 80-87 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Continuation of Disposition of Claims: Claims withdrawn from consideration are 7,8,14,17-23,26,27,33,43,51,53,55,58,59,62,65,66,69,70,75,76,78 and 79.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 14th 2010 has been entered.
2. Currently claims 1, 2, 4, 7-24, 26-28, 30-38, 43, 50-59, 61-63, 65, 66, 69-76 and 78-87 are pending. Claims 7, 8, 14, 17, 23, 26, 27, 33, 43, 51, 53, 55, 58, 59, 62, 65, 66, 69, 70, 75, 76, 78 and 79 have been withdrawn. Claims 3, 5, 6, 25, 29, 39-42, 44-49, 60, 64, 67, 68 and 77 have been cancelled. Claims 1, 2, 4, 9-13, 15, 16, 24, 28, 30-32, 34-38, 50, 52, 54, 56, 57, 61, 63, 71-74 and 80-87 are considered below.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 2, 9-13, 15, 24, 50, 52, 54, 56, 57, 61, 63, 73, 74, and 80-83 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maseda (US 6,514,237) in view of Couvillon (US 2003/0236531).

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Regarding claims 1, 2, 9-13, 15, 24, 73, 74, and 80-83, Maseda discloses a medical catheter comprising (a) an elongate body 114 adapted for insertion into a body lumen, said elongate body having distal and proximal ends and an axis; (b) a balloon 118; and (c) an active region (magnified section, Figure 5) comprising a conductive polymer 500 disposed over the elongate body. Maseda fails to specifically disclose other types of electroactive polymers, such as those which are actuated by volumetric expansion, but clearly indicates that the electroactive polymer used in his disclosure is for explanatory purposes only (col. 4, lines 44-48). Couvillon discloses the device as previously made of record where the conductive polymer strands, electrolyte and counter electrode expand the end of the device in much the same way as a balloon (Figures 2, 7 and 8) which can overcome the stress exerted by smooth muscle cells (paragraph 0039). Couvillon discloses that the conductive polymer strands can expand a balloon-like structure (Figure 2B) in a continuous band (except for being interrupted by aperture 103; Figures 2A-B). Maseda discloses: the electroactive polymer strands may be incorporated into various segments (or any segment) of the device so that the device expands like and mimics a balloon in a balloon catheter (col. 3, lines 3- 6); the circumferentially arranged band of composite strands expands and functions like a balloon (col. 6, lines 47-59); the balloon itself may incorporate the composite strands (col. 8, lines 6-9). It would have been obvious to one of ordinary skill in the art to use the volumetrically expanding conductive polymer actuators of Couvillon to expand the balloon of Maseda because they would be effective at overcoming the stress of smooth muscle that lines vessel walls when dilating a vessel or maneuvering the catheter within

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a vessel. Couvillon teaches that circumferentially oriented electroactive polymer strips can be placed within or under a balloon-like member to expand it (Examiner considers it fully disclosed that the continuous circumferential band 102/110 of Figure 6 is intended to expand the Figure 2/3 capture device 100 from within as depicted in Figure 6).

Maseda discloses using any variety of strip geometries (col. 8, lines 12-17), placed within the outer or inner tubular member (col. 8, lines 4-7; col. 5, lines 56-61; col. 6, lines 56-58). It would have been obvious to one of ordinary skill in the art to have incorporated the electroactive polymer actuator strips beneath, within or within recesses of the balloon of Maseda or the inner tube 116, and to have oriented them circumferentially as disclosed by Couvillon (again the recess being as just described above). The closed circumferential strips or bands would volumetrically expand in a radial direction because polypyrrole (paragraph 0008) expands by swelling (see H. Sahoo et al. – previously cited by Applicant). The balloon and conductive polymer bands could be the active region as claimed where the ends of the Maseda balloon are bonded to the elongate body. Regarding claims 50, 52, 54, 56, 57, 61 and 63, the balloon of Maseda as modified in view of Couvillon would be able to have a second, fluid expandable state as claimed since the Maseda balloon overlies a sealed fluid pathway opening and because the electroactive conductive polymers can be expanded to varying degrees.

5. Claims 1, 2, 4, 9-13, 15, 16, 24, 28, 30-32, 34-38, 50, 52, 54, 56, 57, 61, 63, 71-74 and 80-87 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maseda (US 6,514,237) in view of Couvillon (US 2003/0236445).

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Regarding claims 1, 2, 4, 9-13, 15, 16, 24, 28, 30-32, 34-38, 50, 52, 54, 56, 57, 61, 63, 71-74 and 80-86, Maseda describes the device as described above and previously described on record. Maseda (nor Maseda in view of Couvillon '531) does not disclose electroactive conductive polymer actuators bonded along their entire length to a catheter and beneath a balloon where they can volumetrically and radially expand in order to expand the balloon (paraphrasing the multiple claim limitations that describe this deficiency of Maseda in view of Couvillon '531). Couvillon '445 discloses closed circumferential electroactive conductive polymer bands (see 1103 in Figure 11B and 605/610 overlying structural tube 602 in Figure 6A) which can be volumetrically expanded (polypyrrole – paragraph 0012) in order to radially expand (paragraph 0078) a catheter. Couvillon '445 discloses that this arrangement of actuators allows a catheter to be steered as needed to traverse vasculature (paragraphs 0078, 0079 and elsewhere). Maseda discloses that any portion of the catheter should include any geometry of conductive polymer actuators in order to steer the catheter through the vasculature (col. 2, lines 55-62; col. 8, lines 6-7 and 12-17). Therefore, it would have been obvious to one of ordinary skill in the art to have provided the closed circumferential band /electroactive polymer actuator of Couvillon '445 bonded to the end of tube 116 (as it is bonded in Figure 6B of Couvillon '445) in order to better steer the end of the catheter. With this modification, the balloon would be capable of being expanded by the actuator as claimed since the actuation can change diameter and would underlie the balloon.

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6. Claim 87 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maseda (US 6,514,237) and Couvillon (US 2003/0236445) in view of Sharrow (US 4,793,359).

Regarding claim 87, Maseda as modified by Couvillon discloses the invention as described above comprising a plurality of active regions. Maseda fails to disclose that a first active region is disposed over a first conductive radio-opaque band and wherein a second active region is disposed over a second conductive radio-opaque band that is positioned distal to said first conductive radio-opaque band. Sharrow teaches that a balloon in a balloon catheter can have two conductive (metal) radio-opaque bands positioned at either end of the interior of the balloon to confirm the dilating length of the balloon (col. 4, lines 4-5). It would have been obvious to one of ordinary skill in the art to have incorporated two conductive (metal) radio-opaque bands positioned at either end of the interior of the balloon to confirm the dilating length of the balloon.

Response to Arguments

Applicant's arguments filed June 14th 2010 have been fully considered but they are not persuasive. Applicant's arguments in regard to Couvillon '531 are believed to have been addressed above or previously on record. The remainder of Applicant's arguments are moot in view of Couvillon '445. Examiner appreciatively notes Applicant's genuine attempt to advance prosecution by significantly amending the claims in order to better describe their invention. However, Examiner respectfully contends that more modification to the claim language is necessary in order to overcome the prior art.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas McEvoy whose telephone number is (571)270-5034. The examiner can normally be reached on M-F, 9:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anhtuan Nguyen can be reached on 571-272-4963. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Thomas McEvoy/
Examiner, Art Unit 3731

/Anhtuan T. Nguyen/
Supervisory Patent Examiner, Art Unit 3731
8/14/10